

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/004611

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ A61K31/443, A61P11/00//C07D405/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ A61K31/00-31/80, 45/00-45/08, A61P1/00-43/00,
C07D405/00-405/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MEDLINE (STN), EMBASE (STN), BIOSIS (STN), BIOTECHABS (STN), CAPLUS (STN),
REGISTRY (STN), WPI (DIALOG), JSTPLUS (JOIS), JMEDPLUS (JOIS)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 96/36624 A1 (Kyowa Hakko Kogyo Co., Ltd.), 21 November, 1996 (21.11.96), Example 140; description, page 1, line 4 to page 3, line 23	1-3, 7-9
P, Y	WO 03/066044 A1 (BOEHRINGER INGELHEIM PHARM GMBH. & CO. KG.), 14 August, 2003 (14.08.03), Example 140; description, page 26, line 26 to page 27, line 2	1-3, 7-9
P, Y	WO 2004/005276 A1 (Kyowa Hakko Kogyo Co., Ltd.), 15 January, 2004 (15.01.04)	1-3, 7-9

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

11 June, 2004 (11.06.04)

Date of mailing of the international search report

06 July, 2004 (06.07.04)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 03/016279 A1 (Tanabe Seiyaku Co., Ltd.), 27 February, 2003 (27.02.03), Claims; examples	1-3,7-9
Y	WO 02/098880 A1 (BAYER AG.), 12 December, 2002 (12.12.02), Claims; description, page 1, line 7 to page 2, line 5	1-3,7-9
Y	JP 2002-537383 A (Merck Frosst Canada and Co.), 05 November, 2002 (05.11.02), Claims	1-3,7-9
Y	WO 00/51598 A1 (SMITHKLINE BEECHAM CORP.), 08 September, 2000 (08.09.00), Full text	1,2,7,8
Y	Masayoshi ISHIBASHI et al., "Mansei Heisokusei Haishikkan no Chiryo Theophylline to Atarashii Phosphodiesterase IV Sogaiyaku", Gendai Iryo, 2002, 34(9), pages 2249 to 2254; particularly, pages 2253 to 2254	1,2,7,8
Y	Naomi YAMASHITA, "Tiotropium to Phosphodiesterase IV Sogaiyaku", Biomedicine & Therapeutics, 2001, 35(11), pages 1225-1226; full text	1,2,7,8
Y	Yukio NAGASAKA, "Kokyuki Shikkan ni Taisuru Theophylline no Koka", Kokyu to Junkan, 1996, 44(8), pages 839 to 845; full text	1,2,7,8
P,Y	WO 03/080049 A1 (CELGENE CORP.), 02 October, 2003 (02.10.03), Claims; description, page 12, line 12 to page 18, line 24	1,2,7,8
Y	HAEFNER, D. et al., Additive Effects of Phosphodiesterase-4 Inhibition on Effects of rSP-C Surfactant. Am. J. Respir. Crit. Care Med., 2000, 161, pages 1495 to 1500; particularly, summary	1,3,7,9
Y	TEIXEIRA, M.M. et al., Phosphodiesterase(PDE)4 inhibitors: anti-inflammatory drugs of the future? TIPS, 1997, (18), pages 164 to 170; full text	1,3,7,9

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 4-6

because they relate to subject matter not required to be searched by this Authority, namely:

The inventions as set forth in claim 4-6 pertain to methods for treatment of the human body by therapy. (Article 17 (2) (a) (i) of the PCT and Rule 39.1 (iv) of the Regulations under the PCT)

2. ☐ Claims Nos.:

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Information on patent family members

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WO 96/36624 A1	1996.11.21	AU 9657029 A NO 9700151 A EP 771794 A1 KR 97704724 A AU 705690 B US 2002/0128290 A1 US 6514996 B2 CN 1154697 A US 6716987 B1
WO 03/066044 A1	2003.08.14	DE 10205274 A1 US 2003/0203918 A1 AU 2003205717 A1
WO 2004/005276 A1	2004.01.15	(Family: none)
WO 03/016279 A1	2003.02.27	JP 2003-119180 A JP 2003-119195 A JP 2003-119196 A EP 1424326 A1
WO 02/098880 A1	2002.12.12	EP 1397363 A1
JP 2002-537383 A	2002.11.05	WO 00/50402 A1 AU 200027891 A US 6204275 B1 EP 1157007 A1 AU 764005 B
WO 00/51598 A1	2000.09.08	AU 200033869 A EP 1156799 A1 NO 200104222 A SK 200101237 A3 BR 200008603 A CZ 2001031449 A3 KR 2001102459 A HU 200200288 A2 CN 1349403 A JP 2002-538114 A ZA 200107186 A MX 2001008853 A1 US 6670394 B1 NZ 513695 A
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